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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

NOLAN, DANIEL A

ART UNIT PAPER NUMBER

2655

DATE MAILED: 12/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/668,396

Applicant(s)

STACHURSKI ET AL.

Examiner

Daniel A. Nolan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification (pages 1-3) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification, such as:

- "Speech" is misspelled (9th line page 2).
- The terms "aperiodic" (3rd line from end, page 2), "nonperiodic" (8th line, page 3) and "non-periodic" (2nd paragraph, page 9) are used indiscriminately, where the definitions are the same. To avoid errors of misunderstanding, either standard terminology must be used or the differences explained.

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The Examiner is proceeding with the understanding that all variations have the same meaning (*adjective – 1. irregular: happening at irregular intervals*).

- The grammatical number is not in agreement (page 4, 1st sentence, 2nd paragraph).
- Characterizing the drawings as *heuristic* (mid-page 4) requires explanation.
- The quantization for *fpitch* is missing ("[]" in 2nd line from end, page 14).
- "Zeroth" should be superset (5th line from end, page 18).
- *Left-* and *right-handed* should be hyphenated (7th & 8th line, page 29).
- Hyphens should be used (2nd paragraph, page 33) as the underscore is an editing character.

Appropriate correction is required.

3. The abstract of the disclosure is objected to because the sentences are not complete. Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 1-4 are objected to because of the following informalities:

- In claim 1, the comma should be removed from after the word "and" (2nd line).
- The feature of claim 2 places two features labeled (a) in claim 1.

The Examiner is proceeding with the understanding that this feature will be (e).

- Two features of claim 4 are labeled (c).

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The Examiner is proceeding with the understanding that this last should be (d).

- In claims 1, 3 and 4, the “; and” at the end of the lines should be moved down one feature to the line before last.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Gersho et al & Honda et al

7. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gersho et al (U.S. Patent 6,233,550) in view of Honda et al (U.S. Patent 6,377,916).

8. Regarding claims 1 and 4 as understood by the Examiner, the *Hybrid Coding* of Gersho et al reads on the features of the immediate application as follows:

- Gersho et al (with the title) reads on the feature in the preambles, of a *hybrid speech encoder*.
- While Gersho et al does not explicitly disclose the combination, Honda et al (column 1 lines 20-27) reads on feature (a) *a linear prediction, pitch and, voicing analyzer*.

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Honda et al to the device/method of Gersho et al so as to process all parameters of speech without the complexities of associating segments.

- Gersho et al (column 4 lines 5-15) reads on the feature particular to claim 4, of (b) *a parametric encoder coupled to the analyzer* (termed *vocoder*).
- Gersho et al (claim 1 lines 62-63) reads on the features of a *waveform encoder coupled to the analyzer*.

- Where Gersho et al does not mention *a zero-phase equalization filter*, Honda et al (column 3 lines 27-33) reads on the feature where the *waveform encoder includes a zero-phase equalization filter*.

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Honda et al to the device/method of Gersho et al so as to reduce spectral distortion.

9. Regarding claim 2 as understood by the Examiner, the claim is set forth with the same limits as claim 1. Where Gersho et al does not mention *a zero-phase equalization filter*, Honda et al (column 3 lines 22-23) reads on feature (e) *said zero-phase equalization filter has coefficients determined by said analyzer* which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Honda et al to the device/method of Gersho et al to have the coded pitch position match the source impulse.

Gersho et al, Honda et al & Davis

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gersho et al in view of Honda et al and further in view of Davis (U.S. Patent 4230906).

11. Regarding claim 3 as understood by the Examiner, the *Hybrid Coding* of Gersho et al reads on the features of the immediate application as follows:

- Gersho et al (in the title) reads on the feature, of a *hybrid speech encoder*.
- While Gersho et al does not explicitly disclose the combination, Honda et al (column 1 lines 20-27) reads on feature (a) *a linear prediction, pitch and, voicing analyzer*.

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Honda et al to the device/method of Gersho et al so as to process all parameters of speech without the complexities of associating segments.

- Gersho et al (column 4 lines 5-15) reads on the feature particular to claim 4, of (b) *a parametric encoder coupled to the analyzer* (termed vocoder).
- Gersho et al (claim 1 lines 62-63) reads on the features of a *waveform encoder coupled to the analyzer*.
- Where Gersho et al does not mention a *zero-phase equalization filter*, Honda et al (column 3 lines 27-33) reads on the feature where the *waveform encoder includes a zero-phase equalization filter*.
- Where Gersho et al associates voice with *strongly- and weakly-periodic voiced frames*, which would be subject to interpretation with regard to the features of this claim, with *parametric decoders*, Davis (column 7 lines 18-27) reads on the feature that *decodes zero-phase equalized weakly-voiced frames time-synchronized* ("15" figure 1 & figure 8H) *with parametric decoder decoded strongly-voiced frames*.

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Honda et al and Davis to the device/method of Gersho et al so as to reduce spectral distortion to characterize signals for different strategies in order to avoid misadjusting an extreme segment that could have been legitimate according to other processing perspectives.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Grabb et al (U.S. Patent 6,067,511 A) provides definition of *parametric encoder*.
"Coders which perform compression and decompression functions by extracting parameters of the original speech are generally referred to as *parametric coders*...
Speech coders which employ parametric algorithms to map and model human speech are commonly referred to as "vocoders".
- Hardwick (U.S. Patent 6,377,916 B1) provides different coding strategies for each element of its multiband harmonic transform coder.
- McCree (U.S. Patent 5,699,477 A) defines strongly-voiced and weakly-voiced strategies in a mixed excitation linear prediction with fractional pitch.
- Nomura et al (U.S. Patent 5,125,030 A) employs separate strategies for strongly- and weakly-voiced segments in their coding/decoding system based on the type of speech signal.
- Gersho et al ^{'154} (U.S. Patent 6,311,154 B1) allow for time-synchronized variations of their adaptive windows for analysis-by-synthesis CELP-type speech coding.

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13. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To, can be reached at (703) 305-4827.

The fax phone number for Technology Center 2600 is (703) 872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE".

Formal response to this action may be faxed according to the above instructions,

or mailed to: Commissioner of Patents and Trademarks
Washington, D.C. 20231

or hand-delivered to: Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

Daniel A. Nolan
Examiner
Art Unit 2654

dan

December 6, 2002



DANIEL NOLAN
PATENT EXAMINER